



# **Regional CCS Training in the Permian Basin**

**Susan Nash, AAPG: Lead Co-PI**

**Lance Cole, PTTC: Co-PI**

**Bob Kiker, APTA: Co-PI**

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# Outline

- **The Partners**

- >> Petroleum Technology Transfer Council (PTTC)
- >> American Association of Petroleum Geologists (AAPG)
- >> Applied Petroleum Technology Academy (APTA), Midland

- **The People**

- >> PTTC – Lance Cole & Dwight Rychel
- >> AAPG – Susan Nash
- >> APTA – Bob Kiker, Steve Melzer, Bob Trentham

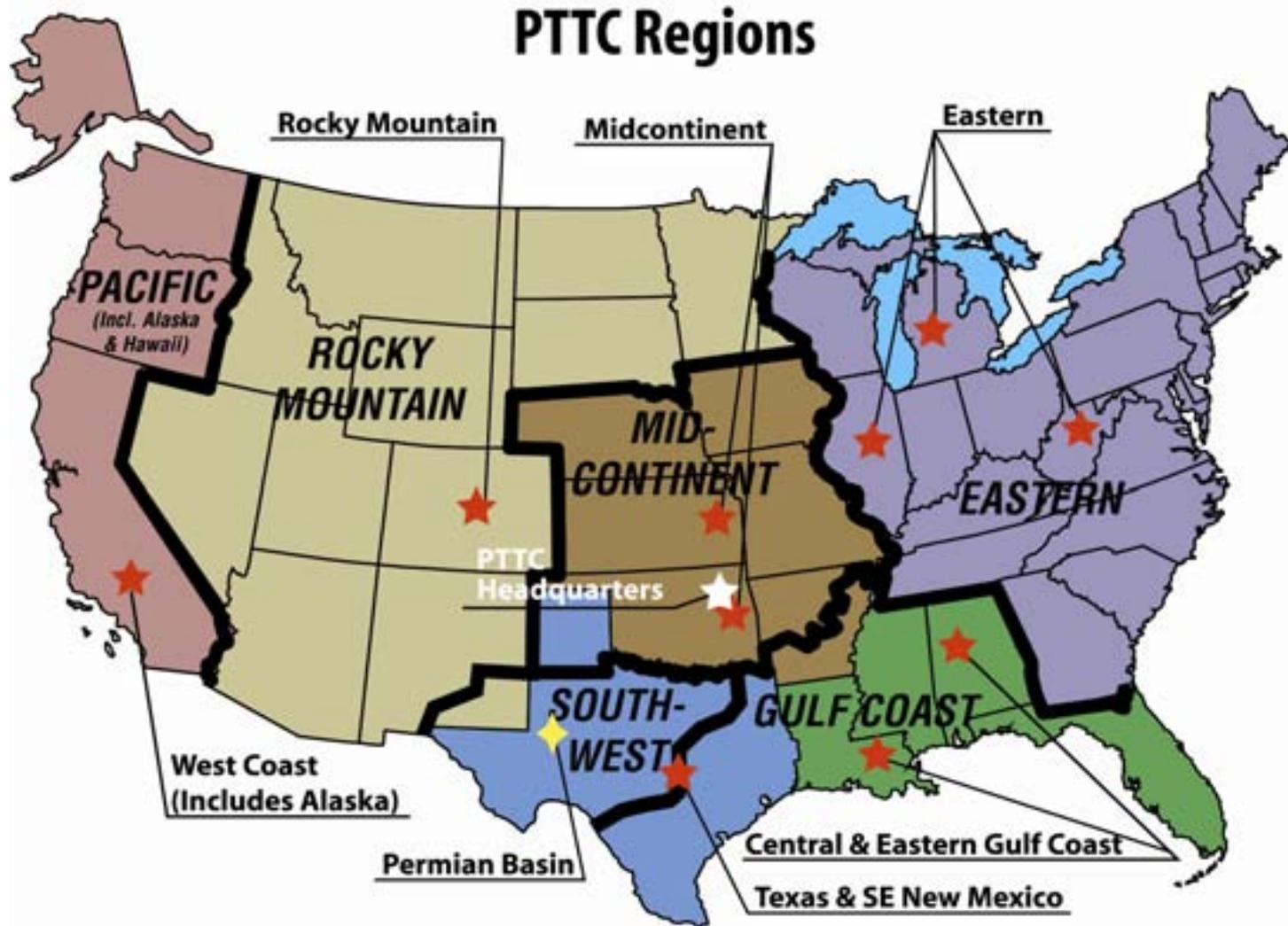
- **The Training Products**

- >> PTTC -- Website, workshops, e-symposia
- >> AAPG – Online Certificate Program
- >> APTA – Extended length short course (tech resource for PTTC, AAPG)

- **The Goal – Tech Adoption; Self-Sustaining**



# The Award Partner — PTTC





## The Award Partner — PTTC

- 15-Yr Track Record – Tech Transfer to O&G (non-profit subsidiary of AAPG since FY07)
- Regional Networks, National Spread
- Website, Workshops, Newsletter, E-alerts
- The CCS/CO<sub>2</sub> EOR (esp. in Permian Basin) Is a Natural Tie – of Interest to PTTC's Current Audience
- Likely Players in CCS/CO<sub>2</sub> EOR Operate in Multiple Basins So Outreach Beyond Permian Basin



## PTTC — The People

- Lance Cole, PE, PTTC Operations Manager
  - >> Tech Transfer w PTTC Since 1996
  - >> Prior EOR Experience as Consultant
- Dwight Rychel, PE, Technical Consultant
  - >> Chair, SPE IOR Symposium, April 2010
  - >> Consulting Experience for FutureGen



## A Supporting Partner — AAPG

- Premier Geoscience Professional Society (37,000)
- Members Have Strong CCS Interest
- Led Multi-Society Research Conference on “Geological Carbon Sequestration: Prediction & Verification), August 2009 in Canada
- New Initiatives in Education & Professional Development
  - >> E-symposia
  - >> Certificate Programs
  - >> Geoscience Technology Workshops



# AAPG — The Person

## Susan Nash

- Geologist & Communications/Education
- Training & Professional Development by Experience
  - >> University Programs
  - >> Recognized Author
- New Directions Within AAPG (In Just One Year)
  - >> Frequent E-Symposia (CCS, Nov. 19, 2 pm CST)  
<http://www.aapg.org/education/online/details.cfm?ID=179>
  - >> Certificate Programs (Alternative Energy Series)



## A Supporting Partner — APTA

- Not-for-profit Formed To Capture & Transfer The “Experience” of the Permian Basin
- Offers An Extended-Length CO<sub>2</sub> Flooding/Operations Short Course
- CO<sub>2</sub> Training Week in the Permian Basin
- Active in FutureGen, Evolution of Carbon Management



## APTA — The People

- Bob Kiker, PE, President APTA
  - >> 30-Yr Conoco Veteran (PB since 1980)
  - >> PTTC Texas/SE New Mexico Program
  - >> CO2 Flooding Operations Expertise
- Steve Melzer, PE, Melzer Consulting
  - >> Recognized CO2/Carbon Management Expert
  - >> Driving Force – Midland’s CO2 Week Since Inception
  - >> President, Texas CCS Association
- Bob Trentham, UT Permian Basin, CEED
  - >> Active Geological Researcher in Permian Basin
  - >> Reservoir Characterization, DOE Class Projects



# WORLDWIDE CO<sub>2</sub> FLOODING

- First Large-scale Demonstrations in Early 70's
- Since Then, Projects Implemented in a Number of Countries
  - Hungary, Turkey, Trinidad, France, Russia as well as in Canada and the U.S.
  - U.S. has dominated the last two decades of growth but with Canada set to 'explode' in a new expansion phase
  - New Demonstration Projects in China, Croatia, Brazil
  - Other Countries are under study now (e.g., UK, Norway, Indonesia, Thailand, Abu Dhabi, Saudi Arabia)
- Through all, CO<sub>2</sub> Flooding has Steady Growth Until Present Day

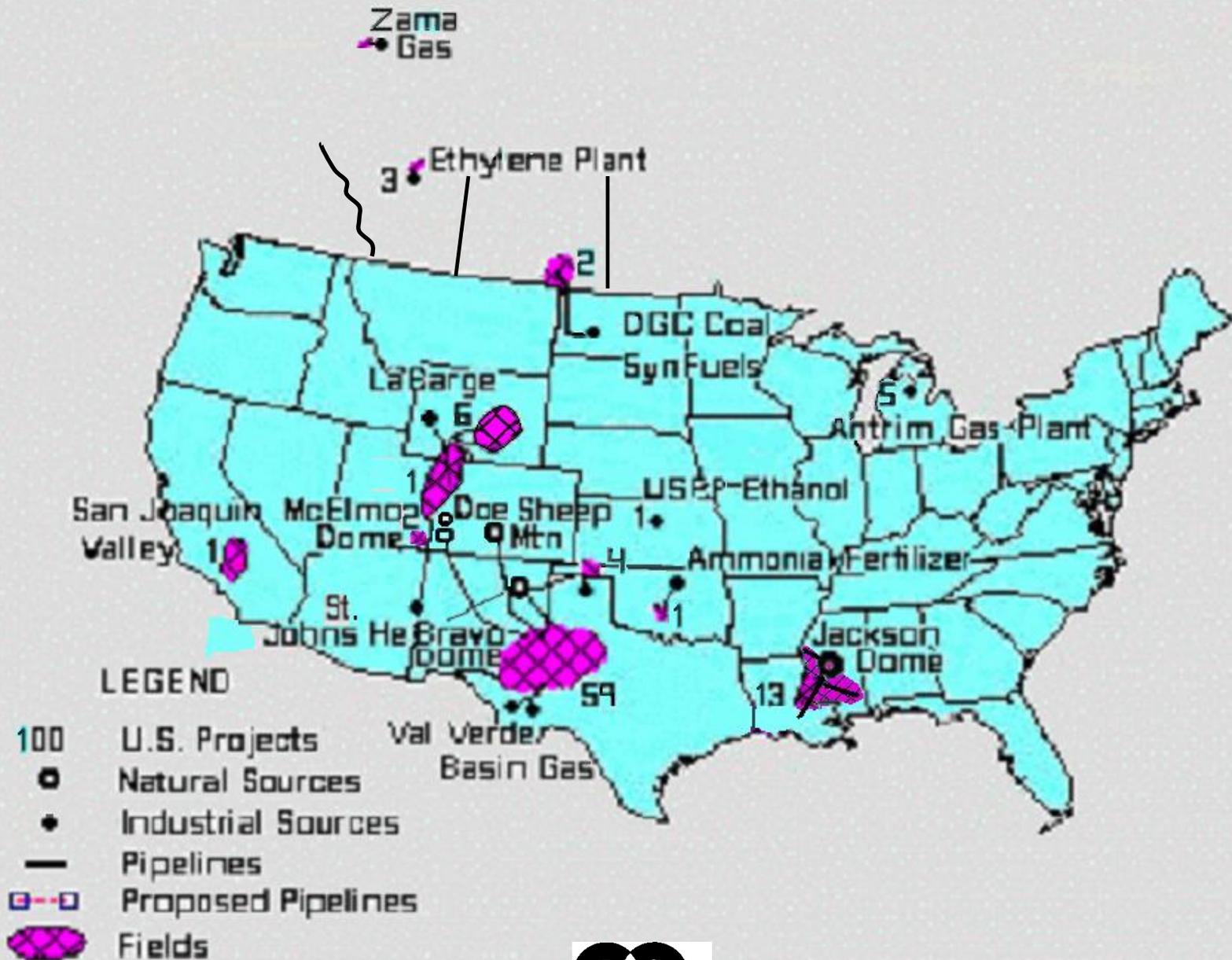


# Annual CO<sub>2</sub> Flooding Conference

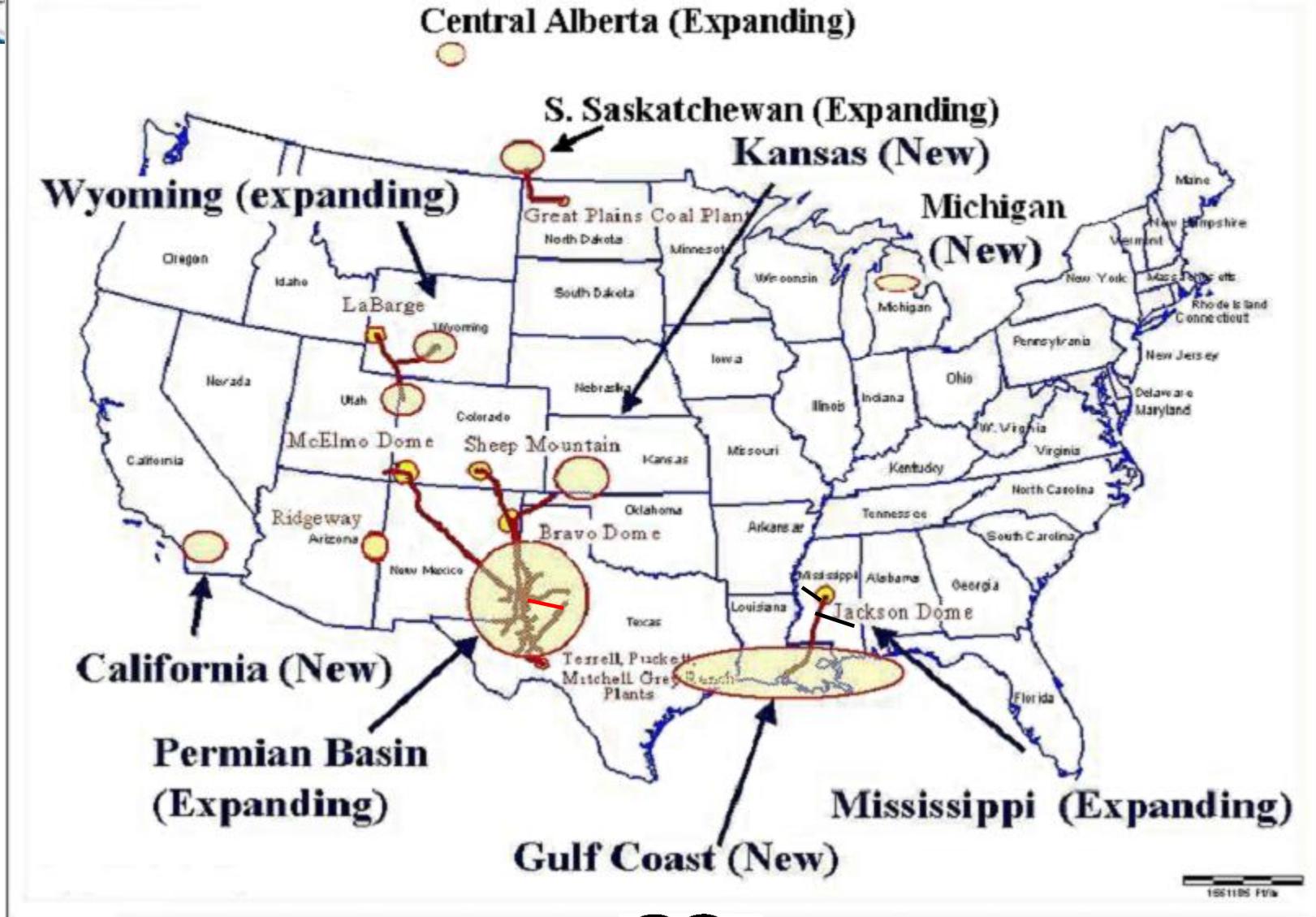
- Held Each December in Midland, Texas – Home to 60 CO<sub>2</sub> Flooding Projects
- Concentrates on Actual Case Histories
- Includes a Field Visit
- Includes an EOR Carbon Management Workshop
- Great Networking Opportunity

*Visit: [www.spe-pb.org](http://www.spe-pb.org) or call 432-552-2430*

# North American CO<sub>2</sub> Floods and Flood Infrastructure



# NORTH AMERICAN CO<sub>2</sub> SOURCES AND EOR AREAS EXPANDING and NEW MARKETS





# Training Products

- Quarterly Workshops (PTTC)
- Quarterly Webinars/E-Symposia (PTTC)
- Annual Geoscience Tech Workshops (AAPG)
- Extended-Length Short Course (APTA)
- Online Certificate Program (AAPG)
- Mini Research Conference (once) (AAPG)
- Plus Website, Newsletter, E-alerts (PTTC)



## Key To Making It Work

- The Performers (Organizations & People)  
(Melzer, Kiker, Trentham – connected w industry)
- Industry Directed (Advisory Board)
  - >> Technical Guidance
  - >> Business Model
  - >> Sponsorship, Marketing Plan

**Long-Term Self Sustainability Is the Goal**



# The End – Questions?

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